B.Tech. Final Year Project (2019-2023)

Broad Area of Project

Date : 18th Dec 2022

Group No: 8

Names / Roll Nos.:

Ganta Sneha Rao - 106119037
Subramanian V V - 106119123
Viswonathan Manoranjan - 106119145

Guide's Name/Dept.:

Dr. Kamalika Bhattacharjee - Computer Science and Engineering

Introduction to Broad Area of your Research:

Cellular Automata And Algorithmic Preprocessing to Improve Clustering

Application / Why it is Important?

Clustering is critical because it determines the intrinsic grouping of the unlabeled data present. For example, we might be interested in finding representatives for homogeneous groups (data reduction), discovering "natural clusters" and describing their unknown properties ("natural" data types), discovering functional and appropriate groupings ("useful" data classes), or discovering unusual data objects (outlier detection).

Design Issues / Requirements / Need for further study:

Some of the design issues include reducing data size by feature reduction, compression and other techniques, finding a proper hash function without corrupting the data and selecting an efficient algorithm from a list of reversible cellular automata.

Issue that will be addressed by your Project:

Cellular automata are used to describe the comparison of things and the formation of clustered groupings. We approach the problem of improving clustering by using Cellular Automata by first pre-processing the data and removing the unnecessary features that do not contribute to the clustering algorithm. We then figure out appropriate hash functions for the cellular automata. Entities that require clustering could be placed in various cells during the early phase of this strategy. During the clustering formation process, entities in one cell could compare with entities in surrounding cells, and similar entities would be grouped.

(Ganta Sneha Rao)(Subramanian V V)(Viswonathan Manoranjan) (Dr. Kamalika Bhattacharjee)

Signature of Students **Signature of Guide**